

REMARKS

Claims 1 - 34 are pending in the present application. By this Amendment, claims 8 - 20 have been canceled, and claims 1 – 7 and 21 - 34 have been amended. No new matter has been added. It is respectfully submitted that this Amendment is fully responsive to the Office Action dated April 8, 2004.

Abstract:

The Abstract stands objected to due to the specific reasons set forth on page 2 of the Action. However, it is respectfully submitted that the Abstract has been amended to overcome this objection. Accordingly, withdrawal of this objection is respectfully submitted.

Concerning argument:

The newly cited references contain disclosures as follows:

Weldy et al. contains a disclosure relating to “a method of processing a sampled input image having pixels which can have missing information at pixel location” as shown in its abstract. However, it does not teach the forming of a color coding array arranged in the randomized array in a color image pickup device so as to satisfy predetermined array restricting conditions such as minimum color density conditions.

Rambaldi et al. discloses CMOS image sensor system in which faulty pixels are previously detected/stored and the faulty pixels in image pickup signals are masked and

the signals at the location of the faulty pixels are interpolated by surrounding pixel signals. The location information of the faulty pixels and the correction information thereof are stored into the nonvolatile memory 26.

Resnikoff et al. contains a disclosure concerning an image pickup device using a random sample array, for minimizing an occurrence of low-frequency noise and aliases. The distribution of CCD array in Resnikoff et al., then, uses a uniform probability (Poisson) distribution so that the configuration of each pixel unit itself is randomly formed. Renikoff et al., however, does not mention at all a single sensor color image pickup device and color filter array therefor.

Claims 1 to 6, and 28, 29 have been rejected by the Examiner under §102(e) as being anticipated by Weldy et al.

This rejection is respectfully traversed.

Weldy et al., however, does not teach at all the forming of a color coding array arranged in the randomized array so as to satisfy predetermined array restricting conditions such as minimum color density conditions.

Claims 7 and 30 to 32 have been rejected by the Examiner under 103(a) as being unpatentable over Weldy et al. in view of Rambaldi et al.

This rejection is respectfully traversed.

Weldy et al., however, as previously described fails to disclose the forming of a color coding array arranged in the randomized array so as to satisfy predetermined array restricting conditions such as minimum color density conditions. Further, the memory in the CMOS image sensor system in Rambaldi et al. merely retains the faulty pixel location information and corresponding correction information, and there is no corresponding relationship with the pixel location information in Weldy et al. It is also obvious that the memory in Rambaldi et al. is not one for storing array data concerning the random color coding array of the present invention.

Claims 8 to 18, 21 to 26 and 30 have been rejected by the Examiner under 103(a) as being unpatentable over Weldy et al. in view of Rensikoff et al.

This rejection is respectfully traversed.

The Examiner mentions that the CCD array distribution in Rensikoff et al. contains a predetermined array restricting condition.

Weldy et al. as the above, however, does not teach at all the forming of a color coding array arranged in the randomized array so as to satisfy predetermined array restricting conditions such as minimum color density conditions. Further, the distribution of CCD array in Rensikoff et al. uses a uniform probability distribution and the configuration of each pixel unit itself is randomized. Moreover, Rensikoff et al. does not mention at all the color filter array of a single sensor color image pickup device.

In the invention of the present application, by contrast, a plurality of pixels of pixel group are regularly arranged by a rule and only the color filter is formed into a random coding array. It should be noted that, regarding this claim rejection, claims 8 to 18 have been canceled.

Claims 19 to 20, and 27 have been rejected by the Examiner under §103(a) as being unpatentable over Welby et al. in view of Resnikoff et al. and in view of Rambaldi et al.

This rejection is respectfully traversed.

Welby et al. as discussed above, however, does not teach at all the forming of a color coding array arranged in the randomized array so as to satisfy predetermined array restricting conditions such as minimum color density conditions. Further, the distribution of the CCD array in Resnikoff et al. uses a uniform probability distribution and the configuration of each pixel unit itself is randomized. Moreover, Resnikoff et al. does not

mention at all the color filter array of a single sensor color image pickup device. Furthermore, the memory in the CMOS image sensor system in Rambaldi et al. merely retains the faulty pixel location information and corresponding correction information, and there is no corresponding relationship with the pixel location information in Weldy et al.

Claims 33 and 34 have been rejected by the Examiner under 103 (a) as being unpatentable over Rambaldi et al. in view of Resnikoff et al..

This rejection is respectfully traversed.

As previously described, however, the distribution of the CCD array in Resnikoff et al. uses a uniform probability distribution and the configuration of each pixel unit itself is randomized, and Resnikoff et al. does not mention at all the color filter array of a single sensor color image pickup device. Further, the memory in the CMOS image sensor system in Rambaldi et al. merely retains the faulty pixel location information and corresponding correction information.

As the above, none of the newly cited references discloses nor suggest a single sensor color image pickup device having a color coding array arranged in a randomized array satisfying predetermined minimum color density conditions which features the spirit of the invention. Accordingly, the present invention is believed to be fully

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patentable and that the claims are in condition for allowance, which action, is requested at an early date.

If the Examiner believes that this application is not now in condition for allowance, the Examiner is requested to contact Applicants' undersigned attorney to arrange for an interview to expedite the disposition of this case.

If this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. The fees for such an extension or any other fees that may be due with respect to this paper may be charged to Deposit Account No. 50-2866.

Respectfully submitted,

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